

CLAIMS

1. The use of a compound of the pyrazolopyridine family for the preparation of a pharmaceutical composition for the treatment of cognitive deficits in patients with neurodegenerative disease.

2. The use according to claim 1, characterised in that the compound is etazolate or tracazolate, preferably etazolate.

3. The use according to claim 1, characterised in that the compound is chosen from the following compounds :

Ethylic ester of 4-butylamino-1-ethyl-6-methyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid (tracazolate),

Ethylic ester of 4-butylamino-1-ethyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid

1-(4-amino-pyrazolo[3,4-*b*]pyridin-1-yl)- β -*D*-1-deoxy-ribofuranose

Ethylic ester of 1-ethyl-4-(*N*'-isopropylidene-hydrazino)-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid (SQ 20009),

4-amino-6-methyl-1-*n*-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine

Ethylic ester of 4-Amino-1-ethyl-6-methyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid (desbutyl tracacolate),

4-amino-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxamide,

Ethylic ester of 1-ethyl-6-methyl-4-methylamino-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,

Ethylic ester of 4-amino-6-methyl-1-propyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,

Ethylic ester of 1-ethyl-4-ethylamino-6-methyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,

Ethylic ester of 4-amino-1-butyl-6-methyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,

- 5-(4-amino-pyrazolo[3,4-*b*]pyridin-1-yl)-2-hydroxymethyl-tetrahydro-furan-3-ol,
allylic ester of 1-allyl-4-amino-6-methyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic
acid,
- 5 4-amino-6-methyl-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
ethylic ester of 4-amino-1-ethyl-3,6-dimethyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-
carboxylic acid,
- 10 ethylic ester of 4-dimethylamino-1-ethyl-6-methyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-
carboxylic acid,
ethylic ester of 1-ethyl-6-methyl-4-propylamino-1*H*-pyrazolo[3,4-*b*]pyridine-5-
carboxylic acid,
- 15 ethylic ester of 4-amino-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
ethylic ester of 4-amino-6-methyl-1-pent-4-ynyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-
carboxylic acid,
- 20 4-amino-1-but-3-enyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-allylamide,
4-amino-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-isopropylamide,
- 25 4-amino-1-pentyl-*N*-*n*-propyl-1*H*-pyrazolo-[3,4-*b*]pyridine-5-carboxamide,
allylic ester of 4-amino-1-butyl-6-methyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic
acid,
- 30 ethylic ester of 4-amino-6-methyl-1-pent-3-ynyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-
carboxylic acid,
4-amino-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-prop-2-ynylamide
- 35 allylic ester of 4-amino-1-(3-methyl-butyl)-1*H*-pyrazolo[3,4-*b*]pyridine-5-
carboxylic acid,
4-amino-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-*N*-(2-propenyl)carboxamide,
- 40 allylic ester of 4-amino-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
4-amino-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-butylamide,
- 45 allylic ester of 4-amino-1-but-3-ynyl-6-methyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-
carboxylic acid,
allylic ester of 4-amino-1-but-3-enyl-6-methyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-
carboxylic acid,

- 4-amino-6-methyl-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-allylamide,
- 5 allylic ester of 4-amino-6-methyl-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- allylic ester of 4-amino-6-methyl-1-(3-methyl-butyl)-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 10 isobutylic ester of 4-amino-6-methyl-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 4-amino-6-methyl-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-butylamide,
- 15 allylic ester of 4-amino-6-methyl-1-(3-methyl-but-2-enyl)-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 4-amino-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-cyclopropylamide,
- 20 ethyl 4-amino-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-hydroxamate,
- prop-2-ynyl ester of 4-amino-6-methyl-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 25 allylic ester of 4-amino-6-methyl-1-pent-4-ynyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- allylic ester of 4-amino-6-methyl-1-pent-4-enyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 30 4-amino-1-pent-3-ynyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-propylamide,
- 4-amino-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-cyclopropylmethyl-amide,
- 35 2-methyl-allylic ester of 4-amino-6-methyl-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 4-Amino-1-pent-3-ynyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-allylamide (ICI 190,622),
- 40 4-amino-1-pent-4-ynyl-N-2-propenyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxamide,
- 4-amino-1-pent-3-ynyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-prop-2-ynylamide,
- 4-amino-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-but-2-ynylamide,
- 45 allylic ester of 4-amino-6-methyl-1-pent-3-ynyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,

- allylic ester of 4-amino-1-(2-cyclopropyl-ethyl)-6-methyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 5 allylic ester of 4-amino-1-hex-5-ynyl-6-methyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 4-amino-1-pent-3-ynyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-cyclopropylmethyl-amide,
- 10 but-3-enylic ester of 4-amino-6-methyl-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- cyclopropylmethylic ester of 4-amino-6-methyl-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 15 4-butylamino-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-allylamide,
- 2-cyclopropyl-ethyl ester of 4-amino-6-methyl-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 20 cyclopropylmethylic ester of 4-amino-6-methyl-1-pent-3-ynyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- cyclopropylmethylic ester of 4-amino-6-methyl-1-pent-4-ynyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 25 ethylic ester of 4-amino-1-benzyl-6-methyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 4-amino-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-benzylamide,
- 30 4-amino-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-phenylamide,
- benzylic ester of 4-amino-6-methyl-1-pentyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 35 4-Azido-1-β-D-ribofuranosylpyrazolo[3,4-*b*]pyridine,
- 1-pent-3-ynyl-N-2-propenyl-4-propionamido-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxamide,
- 40 2-(4-amino-pyrazolo[3,4-*b*]pyridin-1-yl)-5-hydroxymethyl-tetrahydro-furan-3,4-diol,
- 2-(6-methyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-ylamino)-ethanol,
- 45 3-(6-methyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-ylamino)-propan-1-ol,
- propylic ester of 3-(6-methyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-ylamino)-acetic acid,

- ethylic ester of 2-(6-methyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-ylamino)-propionic acid,
 ethylic ester of 2-(6-methyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-ylamino)-pentanoic acid,
 5 ethylic ester of 2-(6-methyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-ylamino)-benzoic acid,
 propylic ester of 3-(6-methyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-ylamino)-pentanoic
 acid,
 10 *N*-benzylidene-*N'*-(3-methyl-1-phenyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-yl)-hydrazine,
N-furan-2-ylmethylene-*N'*-(3-methyl-1-phenyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-yl)-
 hydrazine,
 15 *N*-(4-fluoro-benzylidene)-*N'*-(3-methyl-1-phenyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-yl)-
 hydrazine,
N-(3-furan-2-yl-allylidene)-*N'*-(3-methyl-1-phenyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-yl)-
 hydrazine,
 20 *N*-(4-methoxy-benzylidene)-*N'*-(3-methyl-1-phenyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-
 yl)-hydrazine,
 4-[(3-methyl-1-phenyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-yl)-hydrazonomethyl]-
 25 benzonitrile,
N-benzo[1,3]dioxol-5-ylmethylene-*N'*-(3-methyl-1-phenyl-1*H*-pyrazolo[3,4-
b]pyridin-4-yl)-hydrazine,
 30 *N*-(3-methyl-1-phenyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-yl)-*N'*-(4-nitro-benzylidene)-
 hydrazine,
N-(3-methyl-1-phenyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-yl)-*N'*-(2-nitro-benzylidene)-
 hydrazine,
 35 *N*-(3-methyl-1-phenyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-yl)-*N'*-(4-trifluoromethyl-
 benzylidene)-hydrazine,
N-(3-methyl-1-phenyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-yl)-*N'*-(5-nitro-furan-2-
 ylmethylene)-hydrazine,
 40 *N*-(3-methyl-1-phenyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-yl)-*N'*-(2-trifluoromethyl-
 benzylidene)-hydrazine,
 45 *N*-(3-methyl-1-phenyl-1*H*-pyrazolo[3,4-*b*]pyridin-4-yl)-*N'*-(6-nitro-
 benzo[1,3]dioxol-5-ylmethylene)-hydrazine,

- 4-(3-chloro-4-methoxy-benzylamino)-1-ethyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 5 4-(3-chloro-4-methoxy-benzylamino)-1-ethyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-(pyridin-4-ylmethyl)-amide,
- 4-(3-chloro-4-methoxy-benzylamino)-1-ethyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-(tetrahydro-furan-2-ylmethyl)-amide,
- 10 4-(3-chloro-4-methoxy-benzylamino)-1-ethyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-(5-hydroxy-pentyl)-amide,
- 4-(3-chloro-4-methoxy-benzylamino)-1-ethyl-1*H*-pyrazolo[3,4-*b*]pyridine-5-[3-(2-oxo-pyrrolidine-1-yl)-propyl]-amide,
- 15 ethylic ester of 4-*tert*-butylamino-1-(2-chloro-2-phenyl-ethyl)-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 20 ethylic ester of 1-(2-chloro-2-phenyl-ethyl)-4-cyclopropylamino-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- ethylic ester of 1-(2-chloro-2-phenyl-ethyl)-4-propylamino-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 25 ethylic ester of 1-(2-chloro-2-phenyl-ethyl)-4-phenylamino-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- ethylic ester of 4-butylamino-1-(2-chloro-2-phenyl-ethyl)-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 30 ethylic ester of 1-(2-chloro-2-phenyl-ethyl)-4-(2-ethoxy-ethylamino)-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid,
- 35 ethylic ester of 4-benzylamino-1-(2-chloro-2-phenyl-ethyl)-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid, and
- ethylic ester of 1-(2-chloro-2-phenyl-ethyl)-4-phenethylamino-1*H*-pyrazolo[3,4-*b*]pyridine-5-carboxylic acid.
- 40 4. The use according to any of the preceding claims, for the treatment of cognitive deficit in a patient with Alzheimer's disease, vascular dementia, Parkinson's disease or Huntington's chorea.

5. The use of etazolate for the preparation of a pharmaceutical composition for the treatment of cognitive deficits in patients with neurodegenerative disease, in particular Alzheimer's disease and vascular dementia.
- 5 6. The use according to any one of the preceding claims, characterised in that the composition is administered orally or systemically.